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CARE OF THE SOVIET ARTILLERY PIECE

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The struggle against corrosion (rusting) of gun components, particularly those not protected by paint, occupies an important place in the proper care of the artillery piece. Of primary importance in this regard is the protection of the bore from corrosion. The prompt removal of powder residue and coppering, dirt, and other foreign bodies from the bore will help considerably in increasing the period of serviceability of the piece. Coppering of the bore, characteristic of rifled artillery systems, is caused by the surface layer of the rotating band fusing with powder gases; in addition, coppering may also be caused by pieces of the metal breaking off from the rotating band as it is wedged into the grooves.

The copper is deposited unequally on the walls of the bore, throughout the entire length of the barrel. Powder residue is retained under this layer of copper and creates conditions suitable for corrosion. To lessen this coppering effect, the bore of the gun should be promptly and carefully cleaned. Prior to firing, the bore must be cleaned of any lubricant. After completion of firing, but before the barrel has cooled, the bore should be lubricated with gun oil (in summer) or No. oil (in winter). Within 2-3 hours after firing, the bore is to be washed out with kerosene or soapy water, and plugged.

To get the best results from the cleaning of the bore, every military unit should distribute the number of rammers available so that each rammer will be assigned a specific operation. For instance, one rammer should be used only for lubricating the bore with gun oil, another for removing powder residue and a third for washing out the bore with kerosene or soapy water.

The rammer used for lubricating the bore must be kept particularly clean, and should not be allowed to come into contact with any powder residue, kerosene, or sand. On completion of the work, all rammers should be washed out in warm water.

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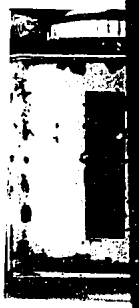

In preparing the gun for firing, particular care must be devoted to the removal of any lubricant from the bore. If the lubricant is not completely removed prior to firing, a swelling or even a bursting of the barrel may result. Special attention must also be paid to the removal of factory lubricants from the bore before putting the gun into operation. Factory lubricants may be removed by means of a rammer and repeated washings of the bore with kerosene or warmed gasoline. After washing, the barrel should be plugged.

If no standard plugs are available, they may be made by the units themselves. The plug, a cylindrical block 1.5-2 calibers in length and 8-10 millimeters smaller than the diameter of the bore, may be cut out on a lathe, using a hard wood (oak or birch). Grooves for retaining the rifling of the gun barrel must be cut in the surface of the plug. To keep the plug from splitting under blows, it may be reinforced with metallic end rings.

Only the specified compounds and liquids should be used to protect the bore and other unpainted metallic surfaces of the artillery piece from corrosion. Otherwise, compounds and liquids themselves might serve as causes of corrosion.

A serious problem for military units is the care of the counterrecoil mechanism of the gun in times of peace, when the chief mass of armament is kept in storage for a long time. Corrosion of the cylinders and rods of the recoil brake and counterrecoil mechanism may result from a number of causes. The liquids used in counterrecoil mechanisms, steol M and AU spindle oil, are normally sufficient anticorrosive elements in themselves. However, should the steol M lose its alkaline properties, and should moisture get into the spindle oil, then these liquids themselves will cause corrosion of the surfaces of cylinders and rods of the counterrecoil mechanism. This makes it imperative that the standard liquids be carefully inspected as to condition prior to filling the counterrecoil cylinder.

No less important a consideration in the care of the counterrecoil device is the proper storage of these liquids so that the possibility of dust and moisture reaching them is eliminated. The liquid should be carefully filtered before being poured into the counterrecoil cylinder.

Work on the care and maintenance of the counterrecoil mechanism should be performed in a dry place. Another prerequisite is securing the proper cleanliness of the work area. After dullness, rust, or dirt have been removed, the parts must be dried with a clean rag, being careful not to touch their surfaces with the bare hand, since moisture on the hand may be a source of corrosion. The cylinders and rods of the recoil brake and counterrecoil mechanisms must be particularly guarded from dust and moisture prior to filling the chamber with liquid.

Dullness or rust may be removed from cylinders and rods by means of a cloth dampened in the liquid used to fill the chamber. If the corrosion cannot be removed in this manner, the parts may be cleaned with powdered charcoal. The use of emery paper is forbidden. After assembly and installation of the counterrecoil mechanism, the ends of the rods should be lubricated with gun oil.

Important in the proper exploitation of armament is the careful keeping of the gun book, which relects the entire life of the gun, from the moment of its manufacture to its removal from the unit with the advent of unserviceability. In the gun book, for example, are listed dates of firing, number of rounds fired, types of shells and charges used, work done on the gun after firing etc. Also noted in the gun book is the condition of each of the gun's parts after every periodic examination, overhaul, or other inspection. Dates and measures taken to change the gun over from summer to winter lubricants, and vice versa, are also entered. On transfer of the weapon from one military unit to another and

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on receipt of the weapon from plant or base supply point, the gun book serves as a basic document in characterizing the gun's working order and readiness for combat. That is why the entry, in the gun book, of the actual working condition of each of the gun's parts assumes such importance. If the working order of the gun's components is unsatisfactory, and defects are found which need elimination, the proper entry of these facts in the gun book will facilitate the restoration of the gun to working order in as short a time as possible.

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